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EXAMINER	
SINGH, DALZID E	

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/839,023	Applicant(s) RAJ ET AL.	
	Examiner Dalzid Singh	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 13 June 2006.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-4,7-15 and 17-30 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-4,7-15 and 17-30 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakata (US Patent No. 5,500,857) in view of Li et al (US Patent No. 6,385,371) and further in view of Asahi (US Patent No. 6,195,186) or Mo et al (US Patent No. 6,693,909).

Regarding claim 1, Nakata discloses optical communication system, as shown in Fig. 7, comprising:

an optical transceiver including a wavelength division multiplexer to enable optical communication with the other two transceivers (as shown in Fig. 7, Nakata shows multiple nodes (21-26), wherein each node comprises of optical transceiver, see col. 5, lines 32-35) to notify a first of the three processor when a second of the three processor is receiving a signal from a third of the three processor (in col. 17, lines 27-52, Nakata teaches notifying a first processor (node) when a second processor (node) is receiving a beam from a third processor (a busy signal inserted into a frame pulse is transmitted as a token to go around the transmission line; since the frame pulse goes

around the transmission lines, therefore other nodes or processor is notified through the management table that a particular wavelength is being used).

Nakata differs from these claims in that Nakata does not specifically disclose a processor coupled to each optical transceiver. However, it is extremely well known that optical transceiver comprises processor to process the signal. As disclosed by Nakata, since the nodes communicate by transmitting and receiving optical signal, therefore it would have been obvious that there exist processor to process the optical signal. Asahi and Mo et al is cited to show such well known concept. On Fig. 16, Asahi shows processor coupled to the data transceiver and on Fig. 3, Mo et al show processing system at the node. As evidenced by the prior arts, it is well known to provide processor at the nodes to process the signals. Therefore, it would have been obvious to an artisan of ordinary skill in the art to couple processor to the optical transceiver of Nakata. One of ordinary skill would have been motivated to do such in order to efficiently control operation of the optical transceiver in transmitting and receiving of information signal.

Furthermore, since the optical transceiver within a node is connected to other optical transceiver at other nodes (for example, in Fig. 7, Nakata shows that the nodes are interconnected in a ring configuration), therefore processor of optical transceiver at one node location is coupled to other processor of optical transceiver located at other node locations.

Furthermore, the combination of Nakata and/ or Asahi and Mo discloses optical communication system comprising of coupler as discussed above and differ from this claim in that Nakata does not specifically disclose that the coupler is elliptical coupler. However, it is well known that there are various designs of optical reflector. Li et al is cited to show the well known concept of using elliptical coupler to reflect optical signal to optical fiber (Fig. 5 shows the use of elliptical reflector (62) to reflect optical signal to optical fiber). Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide elliptical coupler to the optical communication system of the combination. One of ordinary skill in the art would have been motivated to provide such in order to maximize coupling efficiency.

Regarding claim 2, in col. 5, lines 30-32, Nakata teach the that the optical transmitter includes a laser.

Regarding claim 3, in col. 5, lines 22-25, Nakata teaches the use of wavelength filter tunable to a particular input wavelength, which is located at the node.

Regarding claim 4, in col. 5, lines 42-45, Nakata teaches that each processor (processor within the node, see claim 1) is assigned a wavelength (for example, λ_1) for communicating with the other processors located at other node.

Regarding claim 9, in col. 5, lines 55-60, Nakata teaches that each optical transceiver within a node transmits a light beam together with a code identifying a sending and a receiving processor (the code is in a form of an address within the packet of the signal to indicate self address and destination address).

Regarding claim 10, in col. 17, lines 27-52, Nakata teaches that when one processor is receiving a wavelength division multiplexed signal from another processor, the one processor broadcasts to all other processors that the one processor is busy (since a busy signal is indicated by inserting a 1 into a frame pulse, which is transmitted and circulated around the transmission line, therefore busy signal is being broadcast form one optical transceiver containing processor to other optical transceiver containing processor).

3. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakata (US Patent No. 5,500,857) in view of Li et al (US Patent No. 6,385,371) and further in view of Huber (US Patent No. 6,687,428).

Regarding claim 7, as discussed above the combination of Nakata and Li et al disclose optical coupler and differs from the claimed invention in that the combination does not disclose that the coupler includes dispersive element to disperse the reflected light. Huber et al teach the use of dispersive element to disperse light after being reflected by the reflector (Fig. 4 shows dispersive element (38) to disperse light after being reflected by the reflector).

Regarding claim 8, as discussed in claim 7, furthermore, Huber et al show that the dispersive element includes a micro-mechanical structure (see col. 5, lines 46-48).

4. Claims 11-15 and 17-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakata (US Patent No. 5,500,857) in view of Asahi (US Patent No. 6,195,186) or Mo et al (US Patent No. 6,693,909).

Regarding claim 11, Nakata discloses optical communication system, as shown in Fig. 7, comprising:

an optical transceiver including a wavelength division multiplexer to enable optical communication with the other two transceivers (as shown in Fig. 7, Nakata shows multiple nodes (21-26), wherein each node comprises of optical transceiver, see col. 5, lines 32-35); and

notifying a first processor when a second processor is receiving an optical communication from a third processor (in col. 17, lines 27-52, Nakata teaches notifying a first processor (node) when a second processor (node) is receiving a beam from a third processor (a busy signal inserted into a frame pulse is transmitted as a token to go around the transmission line; since the frame pulse goes around the transmission lines, therefore other nodes or processor is notified through the management table that a particular wavelength is being used).

Nakata differs from these claims in that Nakata does not specifically disclose a processor coupled to each optical transceiver. However, it is extremely well known that optical transceiver comprises processor to process the signal. As disclosed by Nakata, since the nodes communicate by transmitting and receiving optical signal, therefore it would have been obvious that there exist processor to process the optical

signal. Asahi and Mo et al is cited to show such well known concept. On Fig. 16, Asahi shows processor coupled to the data transceiver and on Fig. 3, Mo et al show processing system at the node. As evidenced by the prior arts, it is well known to provide processor at the nodes to process the signals. Therefore, it would have been obvious to an artisan of ordinary skill in the art to couple processor to the optical transceiver of Nakata. One of ordinary skill would have been motivated to do such in order to efficiently control operation of the optical transceiver in transmitting and receiving of information signal.

Furthermore, since the optical transceiver within a node is connected to other optical transceiver at other nodes (for example, in Fig. 7, Nakata shows that the nodes are interconnected in a ring configuration), therefore processor of optical transceiver at one node location is coupled to other processor of optical transceiver located at other node locations.

Regarding claim 12, in col. 5, lines 42-45, Nakata teaches that each processor (processor within the node, see claim 1) is assigned a wavelength (for example, λ_1) for communicating with the other processors located at other node.

Regarding claims 13 and 22, in col. 5, lines 51-67 to col. 6, lines 1-12, Nakata teaches step including scanning for the wavelengths of any of said other processors (the optical frame pulse is received detect or scan for available wavelength).

Regarding claims 14 and 23, in col. 5, lines 51-67, Nakata teaches that the node transmitting a light beam having a predetermined wavelength, and transmitting a code

that identifies the transmitting processor and the intended receiving processor (the code is the packet signal including the self and destination address which is converted to a particular wavelength, for example λ_a, and transmitted on the transmission line).

Regarding claims 15 and 24, in col. 6, lines 5-12, Nakata teaches that the receiving processor identifies the wavelength of the incoming beam and the code accompanying said beam, and locks to the wavelength of the transmitting processor (the node checks for available wavelength by identifying the wavelength of the incoming beam, which is included in the management table, if there is an available wavelength, then select or lock that wavelength for communication).

Regarding claims 17, 25 and 27, in col. 17, lines 27-52, Nakata teaches notifying a first processor (node) when a second processor (node) is receiving a beam from a third processor (a busy signal inserted into a frame pulse is transmitted as a token to go around the transmission line; since the frame pulse goes around the transmission lines, therefore other nodes or processor is notified through the management table that a particular wavelength is being used).

Regarding claims 18 and 26, in col. 18, lines 33-38, Nakata teaches indicating when said second processor is no longer communicating with said third processor (processor within the nodes informs other nodes when communication is finished or completed).

Regarding claim 19, in col. 5, lines 53-67, Nakata teaches using a code (for example, packet containing self and destination address) transmitted by the third

processor (node) to determine if a given processor (node) is the intended recipient of a beam transmitted from the third processor (the recipient processor receive the address and determine whether the transmitted signal is intended for it).

Regarding claim 20, as discussed above, since the communication signal is transmitted in optical form (for example, wavelengths are transmitted from one node to the other nodes), therefore the processors (node) are optically interconnected.

Regarding claim 21, Nakata discloses optical communication system, as shown in Fig. 7, comprising:

identify a light communication from a node intended for said first node (in col. 5, lines 51-67 to col. 6, lines 1-28, Nakata teaches that wavelength between the nodes are assigned to be different wavelengths);

tune to said wavelength (each of the nodes are tuned to the assigned wavelength, see col. 5, lines 43-50); and

notifying a first processor when a second processor is receiving an optical communication from a third processor (in col. 17, lines 27-52, Nakata teaches notifying a first processor (node) when a second processor (node) is receiving a beam from a third processor (a busy signal inserted into a frame pulse is transmitted as a token to go around the transmission line; since the frame pulse goes around the transmission lines, therefore other nodes or processor is notified through the management table that a particular wavelength is being used).

Nakata differs from these claims in that Nakata does not specifically disclose a processor coupled to each optical transceiver. However, it is extremely well known that optical transceiver comprises processor to process the signal. As disclosed by Nakata, since the nodes communicate by transmitting and receiving optical signal, therefore it would have been obvious that there exist processor to process the optical signal. Asahi and Mo et al is cited to show such well known concept. On Fig. 16, Asahi shows processor coupled to the data transceiver and on Fig. 3, Mo et al show processing system at the node. As evidenced by the prior arts, it is well known to provide processor at the nodes to process the signals. Therefore, it would have been obvious to an artisan of ordinary skill in the art to couple processor to the optical transceiver of Nakata. One of ordinary skill would have been motivated to do such in order to efficiently control operation of the optical transceiver in transmitting and receiving of information signal.

Furthermore, since the optical transceiver within a node is connected to other optical transceiver at other nodes (for example, in Fig. 7, Nakata shows that the nodes are interconnected in a ring configuration), therefore processor of optical transceiver at one node location is coupled to other processor of optical transceiver located at other node locations.

Regarding claim 28, in col. 5, lines 4-21 and 40-42, Nakata teaches the use optical communications and wavelength division multiplexing.

Regarding claim 29, in col. 5, lines 43-50, Nakata teaches that the first processor-based system (node) to communicate with other processor-based systems (node) using an assigned wavelength (for example, λ_1 is used for communication between node 22 to node 25).

Regarding claim 30, in col. 5, lines 51-57, Nakata teaches that the first processor-based system (node) to transmit a code (a code or packet containing self and destination address) that identifies said first processor-based system (node) and an intended receiving processor-based system (node).

Response to Arguments

5. Applicant's arguments filed 13 June 2006 have been fully considered but they are not persuasive.

On the remark on page 6, applicant indicates there is no notification of one node when a second node is receiving signal from a third node. As indicated in the office action, in col. 17, lines 27-52, Nakata teaches notifying a first processor (node) when a second processor (node) is receiving a beam from a third processor (a busy signal inserted into a frame pulse is transmitted as a token to go around the transmission line; since the frame pulse goes around the transmission lines, therefore other nodes or processor is notified through the management table that a particular wavelength is being used. Therefore, the references still read on the claimed subject matter.

Furthermore, applicant indicates that even if the nodes are aware that two wavelengths were being used, it would not know how they were being used. Such limitation is not recited in the claims. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the step of how the wavelength were being used) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is (571) 272-3029. The examiner can normally be reached on Mon-Fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

September 4, 2006
DS
Dalzid Singh